

Application No.: 10/791,696

Docket No.: 2336-250

REMARKS

Applicants appreciate the Examiner's thorough review of the present application, and respectfully request reconsideration in light of the preceding amendments and the following remarks.

Claims 1-7 and 15-27 are pending in the application. Claim 1 has been amended in the manner kindly suggested by the Examiner in paragraph 3 of the Office Action. New claims 15-27 have been added to provide Applicants with the scope of protection to which they are believed entitled. The title has been amended to be descriptive of the elected and claimed invention. The "Summary of the Invention" section of the specification has been revised to be commensurate in scope with the pending claims. A new Abstract in compliance with commonly accepted US patent practice has been submitted. No new matter has been introduced through the foregoing amendments.

The objection to the drawings for failing to show the original "activator" feature is moot as the feature is no longer recited in the claims. Therefore, no drawing correction is deemed necessary. However, if the Examiner insists otherwise, would she please immediately call the undersigned so that appropriate corrected drawing(s) may be timely submitted avoiding a holding of abandonment of the instant application.

The objection to claim 1 is believed overcome in view of the amendment made to claim 1.

The 35 U.S.C. 103(a) rejection of claims 1-2 and 4-7 as being obvious over *Dhuler* (U.S. Patent No. 6,275,320) is traversed because a prima facie case of obviousness has not been properly established. The Examiner simply alleged that the claim limitations not disclosed by *Dhuler* are well known in the art without citing any prior art reference to prove her point that the limitations were indeed well known in the art prior to the present invention. See the two full paragraphs on page 4 of the Office Action. The Examiner's attention is kindly directed to *MPEP*, section 2144.03

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where guidelines for relying on common knowledge in the art or "well known" prior art are provided.

Any rejection based on assertions that a fact is well-known or is common knowledge in the art without documentary evidence to support the examiner's conclusion should be judiciously applied. Furthermore, as noted by the court in *Ahlert*, facts so noticed should be of notorious character and serve only to "fill in the gaps" in an insubstantial manner which might exist in the evidentiary showing made by the examiner to support a particular ground for rejection. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based. *See Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697; *Ahlert*, 424 F.2d at 1092, 165 USPQ 421. *See MPEP*, section 2144.03 (emphasis added).

In the obviousness rejection of independent claim 1, the Examiner alleged that two (out of three !) limitations of independent claim 1, i.e., the bonding medium layer and the support layer, are well-known in the art, without citing any documentary evidence to support the allegations. The Examiner's allegations are not of notorious character and actually supply more claim limitations than the *Dhuler* reference does. Therefore, the Examiner's well-known allegations serve more than to fill the gaps between the applied reference of *Dhuler* and the claimed invention in an insubstantial manner. In addition, the Examiner is apparently relying solely on common knowledge in the art, without evidentiary support in the record, as the principal evidence upon which her rejection was based. It should be sufficient to note the first full paragraph on page 4 of the Office Action where the well-known allegations are asserted as the only and principal evidence of obviousness.

Accordingly, Applicant respectfully submits that the Examiner's obviousness rejection has failed to follow proper USPTO practice and procedure, and therefore, should be withdrawn or at least rephrased.

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In addition, Applicant respectfully traverses all well-known allegations asserted in the Office Action, and requests that reference(s) of good date be cited in support of the allegations or the allegations be withdrawn.

Withdrawal of the 35 U.S.C. 103(a) rejection of claims 1-2 and 4-7 in view of the above is now believed appropriate and therefore courteously solicited.

The 35 U.S.C. 103(a) rejection of claim 3 as being obvious over *Dhuler* in view of *Peterson* (U.S. Patent No. 6,674,159) is traversed for the following reasons.

First, *Peterson* is non-analogous art. "In order to rely on a reference as a basis for rejection of an applicant's invention [under 35 U.S.C. 103(a)], the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). *See also In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); *In re Clay*, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992) ("A reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem."); and *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993). *See MPEP*, section 2141.01(a).

The present invention relates to a multi-channel optical attenuator in which an actuator structure and a support structure are bonded to each other by a bonding medium to control a light path using a waveguide. *See* page 1, lines 5-15 of the specification. *Peterson* relates generally to the field of microelectronics, and more specifically, to housing of microelectronic devices in a package having an integral window. *See* column 1, lines 25-30 of *Peterson*. Apparently, *Peterson* and the present invention belong to different technical fields. This is also evident from the classification of *Peterson*, i.e., 257/680, which is completely different from the classification of the

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present invention, i.e., 385/140. See the Restriction Requirement sent September 2, 2004, page 2, paragraph 1, sub-section I. Thus, *Peterson* is not in the field of Applicant's endeavor.

Peterson is not reasonably pertinent to the particular problem with which the inventor of the present invention was concerned. It should be noted that, the arguable fact that the inventors of the *Dhuler* reference might consider the *Peterson* teachings is irrelevant. The particular problem with which the inventor of the present invention was concerned is to eliminate the direct bonding between glass and silicon. See page 5, line 7 through page 6, line 10 of the specification. *Peterson* deals with the provision of a package with an integral window for housing a microelectronic device wherein the integral window is bonded directly to the package without having a separate layer of adhesive material disposed in-between the window and the package. See Abstract and column 4, line 65 through column 5, line 4 of *Peterson*. Thus, the matter with which *Peterson* deals is deemed opposite to the problem of the present invention, and hence, would not have logically commended itself to the present inventor's attention in considering the problem of the present invention.

Accordingly, *Peterson* is neither in the field of Applicant's endeavor nor reasonably pertinent to the particular problem with which the inventor was concerned. *Peterson* is non-analogous art that cannot be relied upon in the obviousness rejection of claim 3.

Second, even if *Peterson* was combinable with *Dhuler* as the Examiner argued, the resulting device would still lack the claimed PDMS material. The Examiner's allegation that PDMS is a commonly used polymer-based adhesive is noted. Apparently, the Examiner again relied upon common knowledge in the art without evidentiary support in the record as the principal evidence upon which her rejection was based. The Examiner's attention is again directed to *MPEP*, section 2144.03 where guidelines for relying on common knowledge in the art or "well known" prior art are provided.

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Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration as to defy dispute" (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 USPQ 6 (CCPA 1961)). It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. See MPEP, section 2144.03 (emphasis added).

The Examiner has failed to located any teaching in the applied references, e.g., *Dhuler* and *Peterson*, in support of her allegation that PDMS is a commonly used polymer-based adhesive. This seems to indicate that the fact asserted to be well known is not capable of instant and unquestionable demonstration as being well-known. The Examiner's allegation that PDMS is a commonly used polymer-based adhesive is therefore inappropriate. Applicant respectfully requests that reference(s) of good date be cited in support of the allegation or the allegation be withdrawn.

Withdrawal of the 35 U.S.C. 103(a) rejection of claim 3 in view of the above is now believed appropriate and therefore courteously solicited.

New independent claim 15 is clearly patentable over the applied references because the references do not fairly teach or suggest the newly claimed optical attenuator for attenuating an optical signal being transmitted from a first optical signal transmission line to a second optical signal transmission line, said attenuator comprising: a **moveable waveguide** moveably disposed between the first and second optical signal transmission lines for transmitting the optical signal from the first to the second optical signal transmission lines; a silicon layer carrying said moveable waveguide on a surface thereof; a bonding medium layer having opposite first and second sides,

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said bonding medium layer having, on the first side, a cavity in which the moveable waveguide is received, the first side of the bonding medium layer being bonded to the surface of the silicon layer that carries said moveable waveguide; a support layer attached to the second side of the bonding medium layer; and an actuator formed in a predetermined region of the silicon layer for moving the moveable waveguide relative to the first and second optical signal transmission lines so as to attenuate the optical signal being transmitted.

Dhuler clearly fails to teach or suggest, at least, the claimed moveable waveguide. The waveguides 20 of *Dhuler* are fixed waveguides. It is shutter 16 that is moveable in *Dhuler*. See column 10, line 30 of *Dhuler*. In addition, the Examiner's proposal to provide *Dhuler* with a hermetic package would inevitably requires fixing the waveguides 20 to substrate 12 by, e.g., an adhesive, which, in turn, would render the waveguides absolutely immovable. The teaching reference of *Peterson* is non-analogous art and fails to cure the deficiency of *Dhuler*.

Independent claim 15 is therefore patentable over the applied references. Claims 16-27 depend from claim 15, and are considered patentable at least for the reason advanced with respect to claim 15. Claims 16-27 are also patentable on their own merits since these claims recite other features of the invention neither disclosed, taught nor suggested by the applied art.

For example, claims 16-21 correspond to claims 2-7, respectively, and include limitations which, in the absence of documentary evidence of record, are not deemed well known in the art and therefore non-obvious over the art of record.

As to claim 22, the applied references do not fairly teach or suggest the claimed bonding medium layer being formed of a **solidified liquid polymer**.

As to claim 23, the applied references do not fairly teach or suggest the claimed bonding medium layer being formed of a **polymer permitting covalent bonds between silicon atoms and oxygen atoms**.

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As to claim 24, the applied references do not fairly teach or suggest the claimed support layer being made of glass, wherein the second side of the bonding medium layer includes **oxidized PDMS directly bonded to said glass**.

Each of the Examiner's rejections has been traversed/overcome. Accordingly, Applicants respectfully submit that all claims are now in condition for allowance. Early and favorable indication of allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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